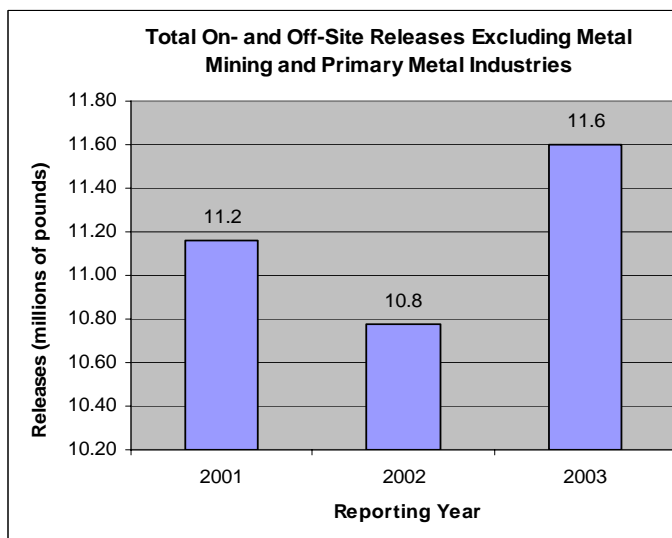
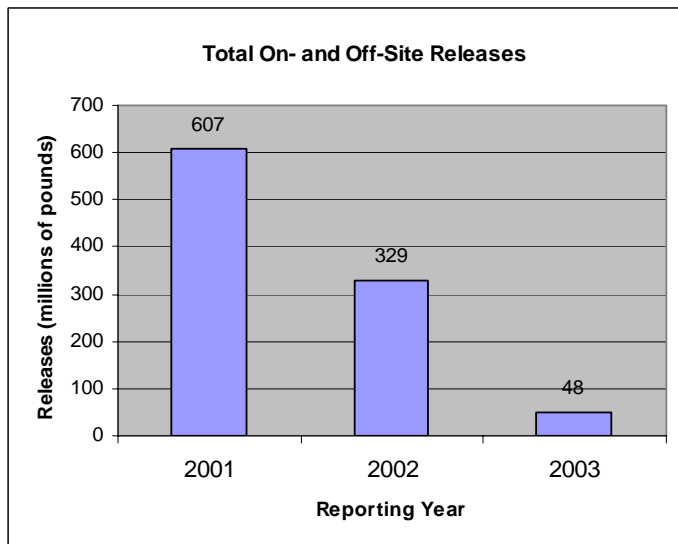




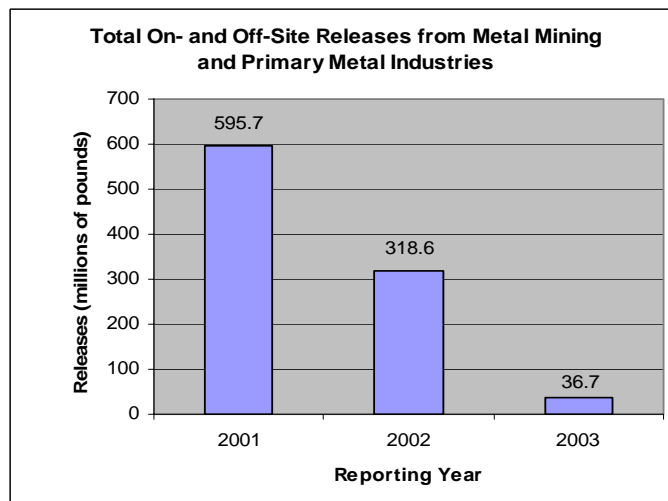
Arizona Report: 2003 Toxics Release Inventory

U.S. EPA Region 9
Arizona, California,
Hawaii, Nevada, the
Pacific Islands, and
Tribal Nations

Toxic Chemical Releases: 2001 - 2003



Total Releases for Reporting Years 2001-2003					
Year	Air	Land	Under-ground Injection	Water	Off-Site
2001	4,590,374	601,476,971	0	6,377	819,361
2002	4,128,261	322,351,725	2,184,988	6,912	725,985
2003	4,669,577	42,904,707	0	6,965	752,809



The 2003 Public Data Release

EPA has made public the 2003 data on toxic chemicals that were released to Arizona's air, water and land. This information comes from the Toxics Release Inventory (TRI), a federal community right-to-know

program. In Arizona, 288 facilities reported a total of 48.3 million pounds of toxic chemical releases*.

It is important to note that release should not be directly equated with risk. To evaluate risk, release data must be combined with information about

* Release is defined as the amount of a toxic chemical released on-site (to air, water, underground injection, landfills and other land disposal), and the amount transferred off-site for disposal. Year to year data comparisons do not reflect changes in reporting requirements.

chemical toxicity, site-specific conditions, and exposure. In addition, this data does not indicate whether a facility is violating environmental laws. Many of the substances reported through this program are subject to state and federal regulations designed to protect human health and the environment.

Industries

A facility is subject to TRI reporting requirements if it: has 10 or more full-time employees; is classified under a reportable Standard Industrial Classification (SIC) code; and manufactures, processes, or otherwise uses any of the listed toxic chemicals in amounts greater than the threshold quantities. For most chemicals (excluding persistent, bioaccumulative and toxic (PBT) chemicals) the thresholds are 25,000 pounds for manufactured or processed, and 10,000 pounds for otherwise used.

Manufacturing industries have been reporting their releases since 1987, and federal facilities started reporting in 1994. In 1998, an additional seven industry sectors began reporting their toxic chemical releases for the first time. These sectors are metal and coal mining, electricity generation, commercial hazardous waste treatment, solvent recovery, petroleum bulk terminals, and wholesale chemical distributors.

Releases

On April 2, 2003 the District Court for the District of Columbia issued a decision in *Barrick Goldstrike Mines, Inc. v. Whitman*, (Civ. Action No. 99-958 (TPJ)), regarding the TRI reporting obligations of mining facilities. The court determined that non-PBT chemicals present in waste rock are eligible for the de minimis exemption. The de minimis exemption states that a facility is not required to consider the quantity of a toxic chemical present in a mixture if it is below 1% of the mixture, or 0.1% of the mixture in the case of a toxic chemical which is a carcinogen. Prior to the decision, mining facilities were required to consider all concentrations of toxic chemicals in waste rock. This decision may explain the large decrease in land releases. EPA is currently providing compliance assistance to these facilities in hopes of clarifying reporting requirements for copper mines.

Many mines extract, move, store, process, and dispose of large amounts of waste rock and ore -- materials

which often contain low concentrations of naturally occurring metals. The vast majority of this material is placed in surface impoundments or on the land, and the metals are reported as on-site releases to land. This previously buried material is exposed to potential leaching by rain, snow, and acid mine drainage, and must be carefully managed and monitored to prevent any surface water or ground-water contamination.

The copper mines are greatly responsible for the 85% decrease from reporting year 2002 for on- and off-site releases for the state. Ninety-nine percent of the decrease in releases is accounted for by land releases. Metal mining and primary metals facilities (facilities in the 10 and 33 SIC codes) make up 76% of the total on- and off-site releases and experienced an 89% decrease in land releases.

Non-mining facilities reported increases in total on- and off-site releases. In reporting year 2003, these facilities reported a 3.6% increase in air (128,164 pounds). The largest increase in releases to air was from Arizona Electric Power Cooperative Inc, whose primary increases were of hydrogen fluoride, hydrochloric acid and sulfuric acid. There was a 9.5% increase in land releases (640,684 pounds). The majority of the increase can be attributed to increased releases from electric generating facilities. In reporting year 2003, Arizona saw a 10.1% increase in water releases (565 pounds). This was primarily due to 817 pounds of chlorine releases at the U.S. DOI Bureau of Reclamation Yuma Area Office.

Persistent, Bioaccumulative, and Toxic Chemicals

In the year 2000, TRI was expanded to include additional persistent, bioaccumulative and toxic (PBT) chemicals, and to require reporting for these chemicals at lower thresholds, ranging from 0.1 grams to 100 pounds. PBT pollutants are toxic chemicals that persist in the environment and bioaccumulate in food chains, thus posing risks to human health and ecosystems.

In Arizona, 5 million pounds of total on- and off-site releases of PBT chemicals were reported. Below is a table of the PBT releases in Arizona ranked by total on- and off-site releases. The data is in pounds for all chemicals except dioxin, which is given in grams.

Table of PBT Chemical Releases in Arizona

Chemical Name	Total On- and Off-Site Releases		Percent Change
	2002	2003	
Lead Compounds	11,433,723.4	4,750,186.5	-58
Lead	97,858.0	130,497.8	33
Polychlorinated Biphenyls	107,794.0	83,520.0	-23
Mercury Compounds	57,100.7	8,716.5	-85
Tetrabromobisphenol A	1,883.0	3,833.0	104
Mercury	889.1	942.6	6
Polycyclic Aromatic Compounds	1,113.3	724.2	-35
Benzo(g,h,i)perylene	1.1	1.2	9
Dioxin and Dioxin-Like Compounds (in grams)	13.3	40.4	204
Grand Total	11,700,375.8	4,978,462.11	-57

Releases of persistent, bioaccumulative and toxic (PBT) chemicals in pounds. Dioxin and dioxin-like compounds data not in Toxicity Equivalence (TEQ).

Overall releases of PBT chemicals decreased 57% in 2003 this is due to the large decreases in releases from metal mining and primary metal facilities. Excluding such facilities there was an 8.4% increase in releases of PBT chemicals. Romic Environmental, a hazardous waste treatment facility in Chandler, Arizona greatly contributed to this increase, reporting a PBT for the first time in reporting year 2003. They reported 70,273 pounds of on- and off-site releases of lead.

Lead and Lead Compounds

Starting in the year 2001, lead and lead compounds were reported as persistent, bioaccumulative and toxic (PBT) chemicals. While lead and lead compounds have been on the list of reportable chemicals since 1987, for the year 2001 the reporting threshold was lowered from 25,000 pounds manufactured or processed, and 10,000 pounds otherwise used to 100 pounds for the manufacture, process, or otherwise use of lead and lead compounds. As a result, additional facilities are required to report releases of lead and lead compounds.

Approximately 4.9 million pounds of total on- and off-site releases of lead and lead compounds were reported in Arizona. Ninety-four percent of these releases are land releases from metal mining and primary metal facilities which experienced a decrease of 6.7 million pounds. Excluding the metal mining and primary

metals facilities there was an increase of 46,813 pounds of lead and lead compounds releases. Romic Environmental, a hazardous waste treatment facility in Chandler, Arizona greatly contributed to this increase, reporting 70,273 pounds of on- and off-site releases of lead.

Mercury and Mercury Compounds

Total on- and off-site releases of mercury and mercury compound decreased 83% from reporting year 2002. A total of 9,659 pounds of on and off site releases were reported, 50% of these were releases from the Phelps Dodge Bagdad facility who reported 4,820 pounds of releases. Excluding metal mining and primary metal facilities there was a 57% increase in mercury and mercury compounds, a total increase of 1,343 pounds due primarily to the Clean Harbors Arizona Facility LLC.

Top Facilities for Releases

The top 10 facilities for total on- and off-site releases, for all chemicals, in Arizona are:

- Ø Phelps Dodge Miami Inc. (Claypool, Gila County) with 13.6 million pounds.
- Ù ASARCO Inc. Ray Complex Hayden Smelter & Concentrator (Hayden, Gila County) with 12.4 million pounds.
- Ú Phelps Dodge Morenci Inc. (Morenci, Greenlee County) with 4.5 million pounds.
- Û Tucson Electric Power Co Springerville Generating Station (Springerville, Apache County) with 3.0 million pounds.
- Ü Phelps Dodge Sierrita Inc. (Green Valley, Pima County) with 2.1 million pounds.
- Ý Navajo Generating Station (Page, Coconino County) with 1.9 million pounds.
- Þ Cholla Power Plant (Joseph City, Navajo County) with 1.5 million pounds.
- Ó Phelps Dodge Bagdad Inc. (Bagdad, Yavapai County) with 1.2 million pounds.
- à Coronado Generating Station (Saint Johns, Apache County) with 1.2 million pounds.
- á ASARCO Inc. Mission Complex (Sahuarita, Pima County) with 1.1 million pounds.

The top 10 facilities for total on- and off-site releases, of PBT chemicals, in Arizona are:

- Ø ASARCO Inc. Ray Complex Hayden Smelter & Concentrator (Hayden, Gila County) with 1.3 million pounds.

- Ū Phelps Dodge Miami Inc. (Claypool, Gila County) with 885 thousand pounds.
- Ū Phelps Dodge Sierrita Inc. (Green Valley, Pima County) with 805 thousand pounds.
- Ū ASARCO Inc. Ray Operations Mine (Kearny, Pinal County) with 762 thousand pounds.
- Ū ASARCO Inc. Mission Complex (Sahuarita, Pima County) with 707 thousand pounds.
- Ÿ Phelps Dodge Bagdad Inc. (Bagdad, Yavapai County) with 118 thousand pounds.
- ▯ Romic Environmental Technologies Southwest (Chandler, Maricopa County) with 70 thousand pounds.
- ♣ Earth Protection Services Inc. (Phoenix, Maricopa County) with 65 thousand pounds.
- à Tucson Electric Power Co Springerville Generating Station (Springerville, Apache County) with 55 thousand pounds.
- á Southwire Co. (Kingman, Mohave County) with 30 thousand pounds.

On-line Access

For national information on data releases, see:

<http://www.epa.gov/tri>

The TRI data is available through Envirofacts Warehouse, EPA's premier internet site for distributing environmental information at:

<http://www.epa.gov/enviro>

or the TRI Explorer tool:

<http://www.epa.gov/triexplorer>

For general information on the Toxics Release Inventory, including reporting requirements for businesses, go to:

<http://www.epa.gov/region09/toxic/tri>

For more information on the EPA's PBT Chemicals Program, go to:

<http://www.epa.gov/opptintr/pbt/>

Information and Assistance

We are happy to answer your questions and assist you in learning more about the TRI Program in Region 9.

U.S. EPA Region 9
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